Notice of Allowability	Application No.	Applicant(s)	
	10/784,463	WALZ, JURGEN	
	Examiner	Art Unit	
	Erica E. Cadugan	3722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment filed 2/23/06 and interview of 5/3/2006*.

2. ☒ The allowed claim(s) is/are *1-5 and 10*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
   a) ☒ All b) ☐ Some* c) ☐ None of the:
      1. ☒ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
      3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
   (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Andrew Wilford on May 3, 2006.

The application has been amended as follows:

Claim1. (currently amended) A method of machining a hollow metal workpiece having a plurality of throughgoing holes and at least one port, the method comprising the steps of:

picking up from a transfer station by a grab the hollow workpiece and displacing the workpiece [[from]] out of the transfer station ~~to a machining station~~;

thereafter, while holding the workpiece ~~in the machining~~ out of the transfer station with the grab,

a) engaging a tool from outside with a first exterior surface of the workpiece and thereby finishing the first exterior surface;

b) reorienting the workpiece by the grab and engaging a second tool with a second exterior surface of the workpiece offset from the first exterior surface and thereby finishing the second exterior surface;

c) fitting a third tool through the port of the workpiece and positioning the third tool inside the workpiece adjacent one of the holes; and

d) coupling a drive spindle through the one hole of the workpiece with the third tool and machining an inner surface of the workpiece adjacent the one hole with the third tool; and

~~e) repeating steps b), c), and d) to finish another interior surface of the workpiece adjacent another of the holes;~~ and

displacing the workpiece ~~from the machining station~~ back into the transfer station and releasing it from the grab.

Claim 2. (previously presented) The machining method defined in claim 1 wherein the first and second exterior surfaces are both surfaces of the holes.

Claim 3. (previously presented) The machining method defined in claim 2 wherein the surfaces of the holes are generally cylindrical.

Claim 4. (previously presented) The machining method defined in claim 1 wherein in step b) the workpiece is positioned by being rotated about an axis through about 90E.

Claim 5. (previously presented) The machining method defined in claim 1, further comprising the step during step d) of

engaging a tailstock through another of the holes with the third tool after coupling of the third tool to the drive spindle to brace the third tool.

Claims 6 to 9. (canceled)

Claim 10. (currently amended) The machining apparatus defined in claim 1, further comprising after step b) and before step c) the step of:

b') shifting the workpiece from ~~the first-mentioned~~ a machining station offset from the transfer station to a second machining station offset therefrom by means of the grab;

step c) being carried out in the second machining station, the workpiece being displaced after step d) from the second machining station back to the transfer station.

2. The following is an examiner's statement of reasons for allowance:

References such as U.S. Pat. No. 5,781,983 to Gruner, for example, teach a device including a "grab" 25 that picks up a workpiece 26 from a "transfer station", such as at 45 or 45' (see Figures 3 and 6, for example). The workpiece is transported to various work stations 22 (see Figure 6) where it is machined while being held by the grab (see Figures 3, 6, and col. 2, lines 16-17, for example). Gruner also teaches that the grab is rotatable about axis 12 (see Figure 3 and col. 4, lines 21-25, for example).

However, references such as Gruner do not specify that the workpiece is "a hollow metal workpiece" having a plurality of "throughgoing holes" and "at least one port" as set forth in claim 1. Additionally, Gruner does not teach the steps of "fitting a third tool through the port of the workpiece and positioning the third tool inside the workpiece adjacent one of the holes" and "coupling a drive spindle through the one hole of the workpiece with the third tool and machining an inner surface of the workpiece adjacent the one hole with the third tool" as set forth in claim 1.

References such as U.S. Pat. No. 3,389,454 to Sattler teach a method of machining a hollow workpiece 10 having a plurality of throughgoing holes, such as 38 and/or 40 (Figure 1), and also inherently having a larger hole or port through which the tool 58 must pass to function as shown in Figures 3 and 5 and through which the tool 66 must pass to function as shown in Figures 4 and 6 (noting that the tool as shown is too big to fit through the small holes through

which the drive shaft or drive spindle 59, 68 of the tools 58, 66 pass). Note that as shown in Figures 3-6, the drive spindle or shaft 59, 68 is coupled through the small diameter holes to the tool (see also col. 2, lines 35-62). Similarly, drive shafts 86 pass through the small holes 40 to engage cutting tool 82, which must inherently pass through a larger hole to fit inside the cavity 20 of the workpiece (see Figure 8, and also see col. 2, line 66 through col. 3, line 8). Additionally, Sattler teaches the machining of "exterior" surfaces of the workpiece as shown in Figures 2 and 7, for example.

However, Sattler does not teach the step(s) of "picking up from a transfer station by a grab" the hollow workpiece and "while holding the workpiece in the grab", performing the machining steps set forth in the claimed steps (a) through (d). Instead, Sattler teaches that the gear case workpiece is moved through a series of work stations (col. 2, lines 12-16) wherein the workpiece is re-fixtured or re-clamped at each station (see col. 2, lines 16-19, and col. lines 27-37, for example).

It appears that the purpose of Sattler's invention was the provision of better-designed locating faces on the workpiece such that the workpiece could be more accurately clamped at each work station, to thereby improve the quality of the finished part (see col. 1, lines 16-48, for example). Thus, to combine Sattler with a teaching such as that of Gruner wherein the workpiece is held by the grab while it is machined and transported would appear to destroy the invention of Sattler, i.e., the better-designed locating faces, since these locating faces would not be used, since the workpiece would not be reclamped at the various machining stations in the Gruner reference.

Similarly to Sattler, U.S. Pat. No. 5,207,749 to Ariyoshi teaches that a tool "A" is fitted through a larger opening or port 56 in a hollow workpiece, while a drive spindle is fitted through a smaller hole of the workpiece to then be drivingly attached to that cutting tool "A" (see Figure 5, also col. 5, lines 17-67, for example). However, it is noted that Ariyoshi explicitly teaches that carrier arms (i.e., a "grab") bring the workpiece B to a predetermined position in the workstation, and then separate clamp arms 31, 32 are utilized to hold the workpiece (col. 5, lines 26-33). In other words, Ariyoshi does not teach that the machining (i.e., steps c-d) occurs "while holding the workpiece" with "the grab" that was used to displace the workpiece "out of the transfer station" as set forth in independent claim 1. Additionally, Ariyoshi does not teach the steps of "engaging a tool from outside with a first exterior surface of the workpiece and thereby finishing the first exterior surface", nor the step of "reorienting the workpiece by the grab and engaging a second tool with a second exterior surface of the workpiece offset from the first exterior surface and thereby finishing the second exterior surface" as set forth in claim 1.

Also, there is no combinable teaching in the prior art of record that would reasonably motivate one having ordinary skill in the art to so modify the teachings of Ariyoshi, and thus, for at least the foregoing reasoning, Ariyoshi does not render obvious the present invention as set forth in independent claim 1. Note that while Gruner does teach an apparatus having a grab that transfers a workpiece from station to station to hold the workpiece while it is machined, and that the grab of Gruner is capable of reorienting the workpiece, Gruner does not overcome the deficiencies of Ariyoshi because Gruner does not teach the method step of "engaging a tool from outside with a first exterior surface of the workpiece and thereby finishing the first exterior surface" in combination with the step of "reorienting the workpiece by the grab and engaging a

tool with a second exterior surface of the workpiece offset from the first exterior surface and thereby finishing the second exterior surface" as set forth in claim 1, for example.

The aforedescribed prior art being a representative sample of the closest prior art of record to the present invention as set forth in the independent claim 1, for at least the foregoing reasoning, the prior art of record does not render obvious the present invention as set forth in independent claim 1.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erica E. Cadugan whose telephone number is (571) 272-4474. The examiner can normally be reached on M-F, 6:30 a.m. to 4:00 p.m., alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on (571) 272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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Art Unit 3722

eec
May 9, 2006